Appendix E

RESIDENTIAL CLUSTER DEVELOPMENT STUDY

PURPOSE

Because of the growing interest in residential cluster development in Waukesha County as a means of preserving open space and rural landscape character, a study was completed to illustrate the cluster development concept and the cumulative visual impact that cluster development might have on the landscape of a large area and to compare this with the visual impact that conventional development would have on the same area.

The perception of landscape character is usually a result of what is seen from roads while driving, walking, or bicycling along them. When residential development occurs in the midst of an otherwise rural landscape, the view of that landscape is dramatically altered. However, perception depends upon what can actually be seen, not on the entirety of what exists on the land. Forty new homes that are openly visible from an existing road will be perceived differently from forty homes that are located 100 feet from the road behind an existing woodland.

"Buildout" plans can be very useful in helping a community determine whether certain types of development will achieve the objectives a community envisions for itself. Many rural communities envision, among other common objectives, the continuance of their rural landscape character, even after substantial development has occurred. Therefore, the purpose of this study was to explore and illustrate the use of cluster development as one means of retaining the perception of rural character while still accommodating the amount of residential development that typical zoning ordinances permit. Three sets of theoretical buildout plans illustrate conventional and cluster layouts at various densities found in Waukesha County. The plans were then evaluated as to their potential for preserving rural landscape character, including significant natural areas.

DESCRIPTION OF THE STUDY AREA

A study area of about three square miles, shown in Figure E-1, was chosen in a rural part of Waukesha County. Properties selected for theoretical development were based on ownerships totaling at least 25 acres. Three property owners owned more than one parcel. Existing smaller lots were excluded from the study, leaving twelve properties for development.

The study area is crossed by three existing streets: Road A (a collector street), Road B (a minor land-access street), and Road C (an arterial street). A freeway with no access within the study area and a utility right-of-way also cross the study area in the northwest quadrant; however, these did not present significant design constraints.

Road A divides the study area approximately in half, from the southwest corner to the northeast corner. The two halves differ in character in that the northern half is more heavily constrained for development because of large areas of such environmentally sensitive land as wetlands, floodplains, woodlands, steep slopes, and soils unsuitable for onsite sewage-disposal systems. The entire study area is largely undeveloped, with just a scattering of single-family houses along existing roads. Farmland predominates; numerous large farmsteads are included within the area.

An existing subdivision of 20 single-family homes lies adjacent to the area at the southeast corner, with a stub street extending to the study area boundary.

ZONING

Zoning in the study area is regulated under the Waukesha County Basic Zoning Ordinance. Predominant existing zoning districts are:

1. An exclusive agricultural district, with a minimum parcel size of 35 acres.

2. An agricultural district permitting a maximum density of one dwelling unit per 10 acres, with a minimum lot size of one acre.

3. A rural residential district permitting a maximum density of one dwelling unit per five acres, with a minimum lot size of one acre.

4. An environmental corridor district permitting a maximum density of one dwelling unit per five acres, with a minimum lot size of two acres.

5. A conservancy district permitting no development.

Five additional residential zoning districts covering insignificant amounts of land permit a range of one- to five-acre lots.

The ordinance permits a transfer of development rights (TDR) among four of the predominant zoning districts (the environmental corridor district is excluded) from one district to another, from one parcel of land to another, and from one area of a single parcel to another on the same parcel. Variable lot sizes are permitted. Only 20 percent of lands in the conservancy and exclusive agricultural districts may be used for transfer, up to a maximum of one-half of the total parcel area. Transfer of density from the ten-acre residential district to the five-acre residential district is encouraged, with a density bonus of 0.2 dwelling units per acre.

METHODOLOGY

This section describes the data that were gathered to provide the foundation for the study, the analytical and design process that was followed, and the assumptions that were used in preparing the plans.

A. Sources of Information

The following sources of information were used in the study for the purposes of determining ownership, site conditions (most importantly, environmental constraints), permitted density, and compliance with adopted County or regional plans:

Waukesha County Basic Zoning Ordinance
Waukesha County Basic Zoning Districts delineated on aerial photos
Waukesha County Shoreland and Floodland Protection Ordinance
Waukesha County Shoreland and Floodland Subdivision Control Ordinance
Regional Bicycle and Pedestrian Facilities System Plan for Southeastern Wisconsin: 2010
A Jurisdictional Highway System Plan for Waukesha County: 2010
Recommended Waukesha County Development Plan
Town Land Division Control Ordinance
Town Park and Open Space Plan: 2000
Town Land Use Plan: 2010
Real property assessment lists and property boundary maps
Regional Planning Commission 1990 ratioed and rectified aerial photographs at a scale of one inch equals 400 feet

Detailed soil maps prepared by the U. S. Natural Resources Conservation Service (formerly known as the U. S. Soil Conservation Service) for the Regional Planning Commission at a scale of one inch equals 200 feet
Slope analysis
Drainage analysis
Regional Planning Commission Geographic Information System mapping information:
Cadastral maps at a scale of one inch equals 200 feet
Topographic maps at a scale of one inch equals 200 feet with a two-foot vertical contour interval
Planned primary and secondary environmental corridors and isolated natural resource areas
1985 wildlife habitat areas
Suitability of soils for conventional onsite sewage disposal systems
Suitability of soils for alternative (mound) onsite sewage disposal systems
Existing Class I, II and III farmlands
Prime agricultural lands
1990 existing land uses

Additionally, an area inspection was made to substantiate interpretations of the information in the resources listed above.

B. Process

After collecting all pertinent data, the following process was used in preparing the alternative development plans:

1. Property ownership was determined and tracts of land were selected for development.

2. A site analysis was completed for the entire study area, determining all significant environmental features and constraints.

3. The maximum number of units permitted on each parcel was calculated.

4. Conventional and cluster layouts were designed for each parcel on the basis of the permitted number of units. Three sets of conventional and cluster layouts were completed for the study area, each set differing in the number of units permitted.

5. The differences in the amount of open space preserved and the visual impact between conventional and cluster development were evaluated.

C. Site Analysis

Of all the information gathered in the resources listed above, certain existing conditions and natural features particularly impacted the design of both the conventional and cluster layouts. These are delineated in Figures E-1 and E-2. Figure E-1 shows existing street and utility rights-of-way, structures, property boundaries, and natural features. Significant natural features are included in primary and secondary environmental corridors and isolated natural resource areas. Hedgerows and smaller wooded areas not included in corridors or isolated natural resource areas are also shown, as well as wetlands, floodplain, bodies of water, and steep slopes of 12 percent or greater. Figure E-2 illustrates the extent of soils that have a high probability of being unsuitable for onsite conventional and mound type sewage-disposal systems.

D. Design Assumptions

The following design assumptions were used in preparing the plans:

1. *General (applies to both conventional and cluster layouts)*

   a. Wetlands, floodlands, and bodies of water would not be encroached upon in either the conventional or cluster layouts.

   b. Woodlands, hedgerows and steep slopes would be avoided whenever possible, but could be encroached upon if necessary.

   c. When cooperation between property owners is required for street connections, no more than two property owners should be involved, wherever possible.

   d. Street systems on adjoining parcels should be connected where deemed necessary for efficient roadway maintenance and emergency vehicle access.

   e. New streets should connect to any existing adjacent street stubs.

   f. Both the conventional and cluster layouts should use the same theoretical permitted number of units.

   g. An area of one acre will be assumed to be the minimum needed to accommodate a house with an onsite sewage disposal system and well.

   h. Transferrable development rights (TDR) would be used only between separate parcels under common ownership.

   I. Right-of-way width for new streets would be 66 feet.

2. *Conventional Layout*

   a. Lands zoned for conservancy and exclusive agricultural uses may be used to meet minimum lot area requirements, provided that at least one acre of buildable area is located outside these districts.

   b. Protected areas could be located in the rear of more than one parcel, with conservation easements ensuring preservation.

   c. New lots can access existing streets.

   d. Some landowners would dedicate land to the County for park purposes under development proposals.

   e. The transfer of development rights from the 10-acre district to the five-acre district was not used, nor was the attendant density bonus applied.

   f. When lot areas were extended into soils unsuitable for onsite sewage disposal systems, an area of at least 10,000 square feet was located outside these soils for such systems.

3. *Cluster Layout*

   a. The order of priority for preserving rural views is, first, to preserve views from existing streets; second, from new streets; and third, from the windows and yards of new homes.

   b. Concealing new development takes precedence over preservation of prime agricultural lands.

c. Preservation of woodlands takes precedence over preservation of prime agricultural lands.

d. The layout of each development parcel would accommodate separate development, but each layout should be coordinated with that of adjoining parcels.

e. A minimum area of 10,000 square feet of suitable soils must be available for onsite sewage-disposal systems. Conventional onsite sewage-disposal systems are preferred to mound systems. This does not apply to Study III-C, which uses community sewage-disposal systems.

f. Access to new homes will come from new internal streets only, not from existing streets.

g. A tract boundary setback is required on all parcels: minimum 50 feet, preferably 100 feet.

RESULTS: COMPARISON OF CONVENTIONAL AND CLUSTER PLANS

This section sets forth the findings of the comparison of the conventional subdivision layouts with the cluster layouts.

Study I: Existing Zoning

The purpose of this study was to illustrate a typical "built out" condition based on existing zoning and to determine its impact on the landscape character. A cluster layout was also prepared with the same number of units and the theoretical difference in visual impact was evaluated.

The permitted number of units was determined by using density formulas provided in the existing zoning regulations. A total of 202 dwelling units was permitted. Refer to Table E-1 for data comparisons.

A. *Conventional Development (Figure E-3)*
The plan in Figure E-3 illustrates that, even with fairly large lots, rural landscape character could still be compromised by new development. There is little control over the removal of potentially screening vegetation or the placement of homes. When new homes are openly visible, rural landscape character is lost. For example, 35 new houses with attendant driveways were located along Road A, 17 along Road B, and six along Road C. Development along new roads is also openly visible. Although street trees would probably be required, they would not provide sufficient screening to conceal an undesirable view, nor would they be expected to. It would be difficult to mitigate the visual impacts of conventional development through design requirements, such as requiring the preservation of existing hedgerows or the planting of new screens, because such buffers and screens would be located on private lots.

In addition to reducing the rural character of the landscape as seen from existing and new roads, further environmental impacts could result from the fact that lot areas were extended into primary and secondary environmental corridors containing wetlands, woodlands, and steep slopes. Once such environmentally sensitive areas are privately owned, control over their degradation becomes difficult.

The street and lot layout on each parcel was designed as a developer might typically develop it, that is, maximizing the number of lots on existing streets and creating as many large lots as possible over the entire parcel even though the minimum lot size permitted is one acre. These goals often override the community objectives of preserving environmentally sensitive areas and the rural landscape.

It could be argued that new houses located far apart on large lots in existing woodlands would not significantly impact the rural character of an area in a negative way. This could be true if design guidelines were followed, such as locating the houses a significant distance from the streets and highways, preserving woodlands in the front yards (including undergrowth), and curving the

driveways so that views of the houses are not possible. While a pleasing result may be possible in existing woodlands, this is not necessarily true in open fields. Houses on large lots, clearly visible in open fields, do not necessarily convey a rural landscape character. Planted screens would help, but with homes widely scattered it would be difficult to achieve a satisfactory result.

B. *Cluster Development (Figure E-4)*
Despite having almost the same number of units and overall density as the conventional layout, the cluster layout has almost four times as much open space (1,664 acres versus 425 acres). This is made possible by using a minimum lot size of one acre, as opposed to lot sizes ranging from five to 20 acres. Also, the total length of new streets is reduced by 30 percent, from 8.4 miles to 5.8 miles, creating a savings in construction costs to the developer (which is usually passed on to the consumer) and a future savings to the municipality in street maintenance, if the streets are publicly owned.

Density overall is one dwelling unit per 9.6 acres, with one dwelling unit per 13.4 acres on the more constrained northern half and one dwelling unit per 7.0 acres in the less constrained southern half.

The open space is extensive, containing contiguous large areas of prime agricultural soils. Thus, continued farming would be a possibility, if this were an objective.

Because of the design flexibility that permits the units to be located substantially out of sight, the preserved open space could be located adjacent to existing roads, thereby preserving the existing rural character. Only four new houses were located within 300 feet of Road A in the cluster layout, only two along Road B, and none along Road C.

In addition to preserving rural landscape character along roads, environmental corridors are also preserved because private lot areas need not be extended into them. These sensitive and scenic areas could, instead, be accessible to all residents of the new development through a network of trails and comprise a major element in the landscape character visible to all who pass through.

With a low overall density of less than one dwelling unit per 10 acres, it is clearly easy to preserve rural character by locating new houses away from existing roads and by preserving almost all hedgerows and woodlands which can screen new homes. Additionally, new plantings could be made in the common open space to help screen the new housing.

Study II: One Dwelling Unit per Five Acres

While the results of Study I were satisfying as to the ability of cluster development to preserve rural character and farmland, the very low density produced by the existing zoning in the study area is not typical in the County. Therefore, in order to reflect more commonly occurring conditions, the density was increased in Study II. To permit valid comparisons among the three completed studies, the same zoning map and ordinance regulations were used, except that the district permitting a density of one dwelling unit per five acres with a minimum lot size of one acre was revised to require a minimum lot size of five acres and the district permitting a density of one dwelling unit per 10 acres was revised to permit one dwelling unit per five acres with the minimum lot size changed from one acre to five acres.

A. *Conventional Development (Figure E-5)*
Because of existing environmental constraints, it was not possible to fit all 291 permitted units on the twelve development parcels at this density with lot sizes of five acres; it was possible to fit only 276 units. This resulted in an overall density of one dwelling unit per 7.0 acres. The density in the more constrained northern half was one dwelling unit per 8.8 acres, where 310 acres of land zoned for conservancy uses remained as common open space (although the development rights from that land were included in the permitted density). The density in the less constrained southern half was one dwelling unit per 5.6 acres. The 276 units are served by 10.9 miles of new street.

Figure E-5 is similar to Figure E-3 in that all new homes are openly visible from existing, as well as new, roads, and there is little control over the destruction of hedgerows and woodlands or the location of houses on the lots. Many sensitive features of primary and secondary environmental corridors are located on private lots. Although some lots are large, houses are fairly evenly distributed across each of the twelve development parcels. With 37 new homes taking access from Road A, 18 from Road B, and 7 from Road C, the rural landscape character as seen from these streets would be greatly reduced. Other new homes located in open fields along new streets and seen from a distance further detract from the scene. The cost of screening widely scattered new homes would be prohibitive.

Again, further environmental and visual impacts would probably result from the fact that lot areas are extended into primary and secondary environmental corridors, which include wetlands, woodlands, and steep slopes.

At 86 percent open space, cluster groups could be widely separated and the rear yards of individual lots could naturally extend into the open space.

B. *Cluster Development (Figure E-6)*
The cluster development is able to accommodate all permitted 291 units at an overall density of one dwelling unit per 6.7 acres; this breaks down to one dwelling unit per 8.2 acres in the northern half and one dwelling unit per 5.4 acres in the southern half. Despite the higher density, the cluster plan provides almost five times as much common open space (1,504 acres versus 310 acres) as the conventional plan and reduces the total length of new streets by 12 percent.

With the design flexibility clustering allows, new homes could be located away from existing streets, preserving rural views. With added screening where homes are located in open fields, few would be visible from Roads A, B, and C. Large contiguous areas of open space are preserved, many of which are located on prime agricultural soils, making continued farming possible if that were an objective.

At 77 percent open space, most cluster groups could be separated from each other by substantial distances (200 to 300 feet) and crowding of lots was not a problem. Almost all rear yards would have views into, and would directly access, significant open space.

Study III: One Dwelling Unit per Three Acres

Another commonly occurring density in Waukesha County is one dwelling unit per three acres. Study III illustrates the results of clustering at this density, with two different minimum lot sizes, and compares each of these layouts with a conventional layout. Again, to permit valid comparisons with the previous studies, the same zoning map and ordinance regulations were used, except that the requirements for maximum densities of one dwelling unit per five acres and one dwelling unit per 10 acres with minimum lot sizes of one acre in the two residential districts were revised to permit one dwelling unit per three acres with a minimum lot size of three acres. In Study III-C a 20 percent density bonus was added for cluster development.

A. *Conventional Development (Figure E-7)*
Because of the existing environmental constraints, it was not possible to fit all the 465 permitted units on the twelve development parcels at this density with a minimum lot size of three acres; only 420 units would fit. This resulted in an overall density of one dwelling unit per 4.6 acres. The density in the more constrained northern half was one dwelling unit per 5.8 acres, where 310 acres of land zoned for conservancy uses remained as common open space (although the development rights from that land were included in the permitted density). The density in the less constrained southern half was one dwelling unit per 3.7 acres. The 420 units would be served by 13.6 miles of new streets.

Rural character would clearly be lost, with 49 new houses and driveways located along Road A, 28 along Road B, and nine along Road C. It cannot be assumed that any of these new houses would be screened or that any of the existing vegetation outside wetlands and floodplains would be preserved.

B. *Cluster Development (Figure E-8)*
In the cluster development, all 465 permitted units could fit on the parcels at an overall density of one dwelling unit per 4.2 acres. Density in the northern half was one dwelling unit per 5.1 acres, and in the southern half it was one dwelling unit per 3.4 acres.

Although this plan accommodates 45 more units than the conventional plan, more than four times as much open space is created (1,275 acres versus 310 acres) and new street length is reduced by 27 percent. This plan illustrates that even with more lots, when lot sizes are smaller, more open space and shorter street lengths can be created for the benefit of all concerned: the municipality, the future resident, and the developer.

Despite the higher density, major stretches of existing streets, as well as new streets, are kept free of new homes, thereby preserving rural character. Where new homes must be located close to existing streets, screening vegetation could be required in the common open space or within buffer easements on private lots.

With open space at 66 percent, this plan was the least satisfactory of the four cluster plans in the degree of flexibility available for locating homes away from new and existing streets and the ability to separate cluster groups from each other. Some areas of the development would tend to look rather suburban, particularly in the southern half. Although some large areas of open space could be preserved, they tended to be primarily the most environmentally constrained, with little additional land being preserved.

C. *Cluster Development with a 20-percent Density Bonus (Figure E-9)*
This variation accommodates 20 percent, or 93, more units than the abovereferenced layout in Study III-B. The minimum lot size was also revised, to one-half acre. A density bonus can sometimes be desirable as an incentive to developers to use cluster development rather than conventional development. Incentives are important when cluster development is simply an option within a zoning district and is not a mandatory requirement. A higher density can also help to offset the costs of a private community sewage treatment and disposal system. Because of the small lot size, onsite sewage-disposal systems would not be possible; therefore, public sewers or community systems would be required. To show how community systems could be accommodated within cluster developments, areas large enough for common onsite sewage treatment and disposal systems were located within each development parcel outside of any areas of poor soils.

Despite the even greater number of units and higher density than in Study III-B, 13 percent more open space was created (1,469 acres versus 1,275 acres) and street length was reduced by 17 percent (from 13.2 miles to 10.9 miles). This is because the minimum lot area was reduced by 50 percent, from one acre to one-half acre, while the number of units was increased by only 20 percent. This plan illustrates the important relationship between density and minimum lot size. As density increases, minimum lot size should be reduced in order to maintain the amount of open space needed to preserve rural character.

CONCLUSIONS

The four residential cluster development plans range from a density of one dwelling unit per 9.6 acres to one dwelling unit per 3.5 acres, with significant differences between densities on the northern half of the study area and the southern half on all plans. The plans used a minimum lot size of one acre, five acres, three acres, and one-half acre. Over all they resulted in a range of 66 to 86 percent open space. Not surprisingly, the

largest amount of common open space was created at the lowest density. However, at 76 and 77 percent, the second largest amount of open space was almost equal between Studies II-B and III-C, although II-B had almost half the number of units as III-C. Despite the differences in density, both these plans were satisfactory in the flexibility created for locating homes away from streets and cluster groups away from each other. These two design factors would contribute the most to the preservation of rural landscape character. Such preservation was attained even more easily with 86 percent open space, as shown in Study I-B. When the amount of open space dropped to 66 percent, as it did in Study III-B, the task of locating units away from roads and separating them from each other became more difficult and the end result would be less effective. However, the cluster plan in Study III-B would still be more effective in preserving rural character than a conventional plan at a similar density.

The greater effectiveness of Study III-C over III-B illustrates that density alone is not the only factor determining whether landscape character can be preserved; lot size is equally important. When the right combination of permitted density, minimum lot size, and required amount of open space comes together, preservation of rural landscape character becomes possible.

It is not reasonable to expect that a rural area will not change with the addition of 200 to 500 homes; however, the visual impact of the new development can be greatly mitigated by the use of cluster development coupled with design guidelines or regulations aimed at screening the new houses. It would appear that a big step toward rural preservation has taken place when, during the course of development, long stretches of existing or new street frontages are preserved in open space, existing landscape features are left intact, new homes abut substantial open space to the side or rear, farmsteads are not overly crowded by new homes, and farm fields remain large enough to be farmed,

This study demonstrates that the preservation of about 65 to 85 percent of an area in open space is desirable to achieve a rural appearance in the landscape. Even with this amount of open space, however, it must be assumed that new buffers of screening plant material would be needed to enhance the screening potential of existing woodlands and hedgerows. Heavier screening would be needed at 65 percent open space than at 85 percent. Such screening can be more easily required in cluster development than in conventional development.

A ratio of 50 percent open space is considered by some to be adequate for rural preservation. However, it should be noted that true rural areas have at least 95 percent open space (based on a 100-acre farm with about five acres occupied by a farmstead complex of buildings). Thus, 50 percent open space may be expected to result in improved suburban development, but not necessarily in rural preservation. If preservation of rural landscape character is the objective, it would appear that no less than 65 percent of an area in open space would be needed. If preservation of farming is to be part of that objective, it would appear that a higher percentage of open space would be desirable, probably in a range of from 65 percent up to 85 percent.

The plans show that all four cluster developments preserve rural character to a greater extent than conventional development at the same density, if it is accepted that rural character is measured by what is seen, first, from existing streets, second, from new streets, and, third, from the windows and yards of new homes. The flexibility to locate clustered homes away from existing streets, farms, woodlands, or other desirable features provides a great design advantage over conventional development which forces all permitted homes to be evenly scattered across a development parcel. Although the Waukesha County Basic Zoning Ordinance provides more design flexibility than others by permitting variable lot sizes and the transfer of development rights, adding cluster development as a permitted residential use would enhance the prospects for successful preservation of existing rural landscape character.

Table E-1

WAUKESHA COUNTY DEVELOPMENT PLAN RESIDENTIAL CLUSTER DEVELOPMENT STUDY DATA

The following data are derived from the development layouts shown in Figures E-3 through E-9. The study area equals 1,945 acres (approximately 3.0 square miles).

Studies	Number of Dwelling Units[a]		Achieved Density[b]	Resultant Open Space[c]		Streets		
	Permitted	Achieved		Acres	Percent	Linear Feet	Miles	Acres
Study I: Existing Zoning[d]								
A. Conventional development	202	201	1 dwelling unit per 9.7 acres	425[e]	22	44,080	8.4	67
B. Cluster development	202	202	1 dwelling unit per 9.6 acres	1,664	86	30,790	5.8	47
Study II: 1 Dwelling Unit Per 5 Acres[f]								
A. Conventional development	291	276	1 dwelling unit per 7.0 acres	310[e]	16	57,600	10.9	87
B. Cluster development	291	291	1 dwelling unit per 6.7 acres	1,504	77	50,700	9.6	77
Study III: 1 Dwelling Unit Per 3 Acres[g]								
A. Conventional development	465	420	1 dwelling unit per 4.6 acres	309	16	71,700	13.6	109
B. Cluster development	465	465	1 dwelling unit per 4.2 acres	1,275	66	69,740	13.2	106
C. Study IIIB + 20 percent[h]	558	558	1 dwelling unit per 3.5 acres	1,469	76	57,640	10.9	87

[a]Under conventional development, it is not always possible to fit the permitted number of units on a parcel, usually due to environmental constraints. Therefore, the number of units permitted and the number of units achieved are shown separately. Existing dwelling units are included in the permitted number of units. It is assumed that an area of at least one acre is needed to accommodate a house with an onsite sewage disposal system and well.

[b]This number is the study area (1,945 acres) divided by the number of units achieved.

[c]This number does not include the area occupied by streets.

[d]The number of units permitted was determined by existing zoning regulations.

[e]This acreage is environmentally constrained and zoned for conservancy uses. The assumption was made that land would be dedicated for park/parkway or other open space uses; however, the development rights were transferred to other parts of the affected parcel, as permitted by ordinance.

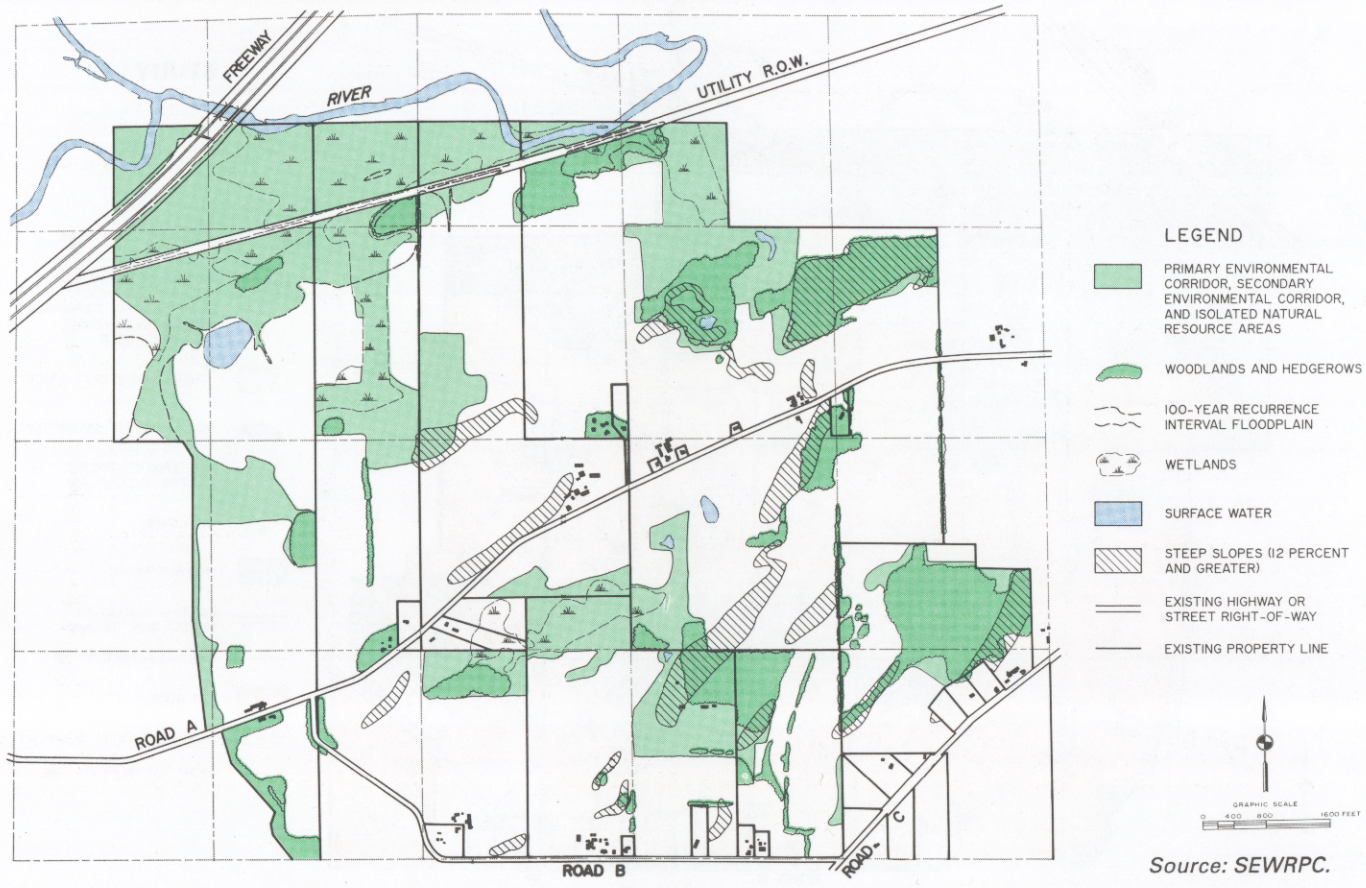
[f]The number of units permitted was increased beyond that permitted by existing zoning by revising the residential district permitting one dwelling unit per 10 acres to permit one dwelling unit per five acres. The minimum lot size for conventional development was increased from one acre to five acres.

[g]The number of units permitted was increased beyond that permitted by existing zoning by revising the residential districts permitted one dwelling unit per five acres or 10 acres to permit one dwelling unit per three acres. The minimum lot size for conventional development was increased from one acre to three acres.

[h]The number of units permitted was increased beyond that permitted in Study III-B by adding a 20 percent density bonus.

Figure E-1

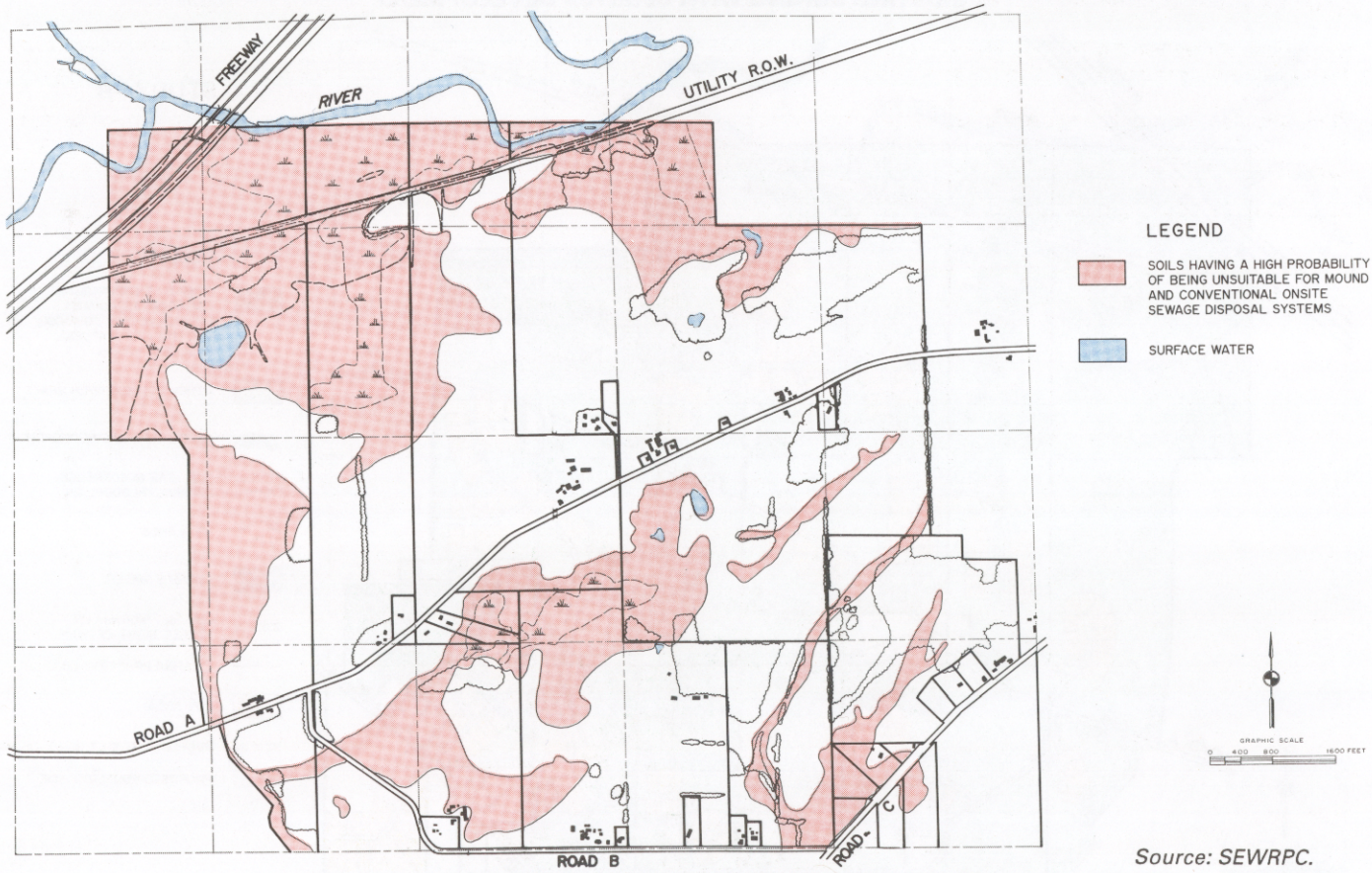
SIGNIFICANT ENVIRONMENTAL FEATURES



Source: SEWRPC.

Figure E-2

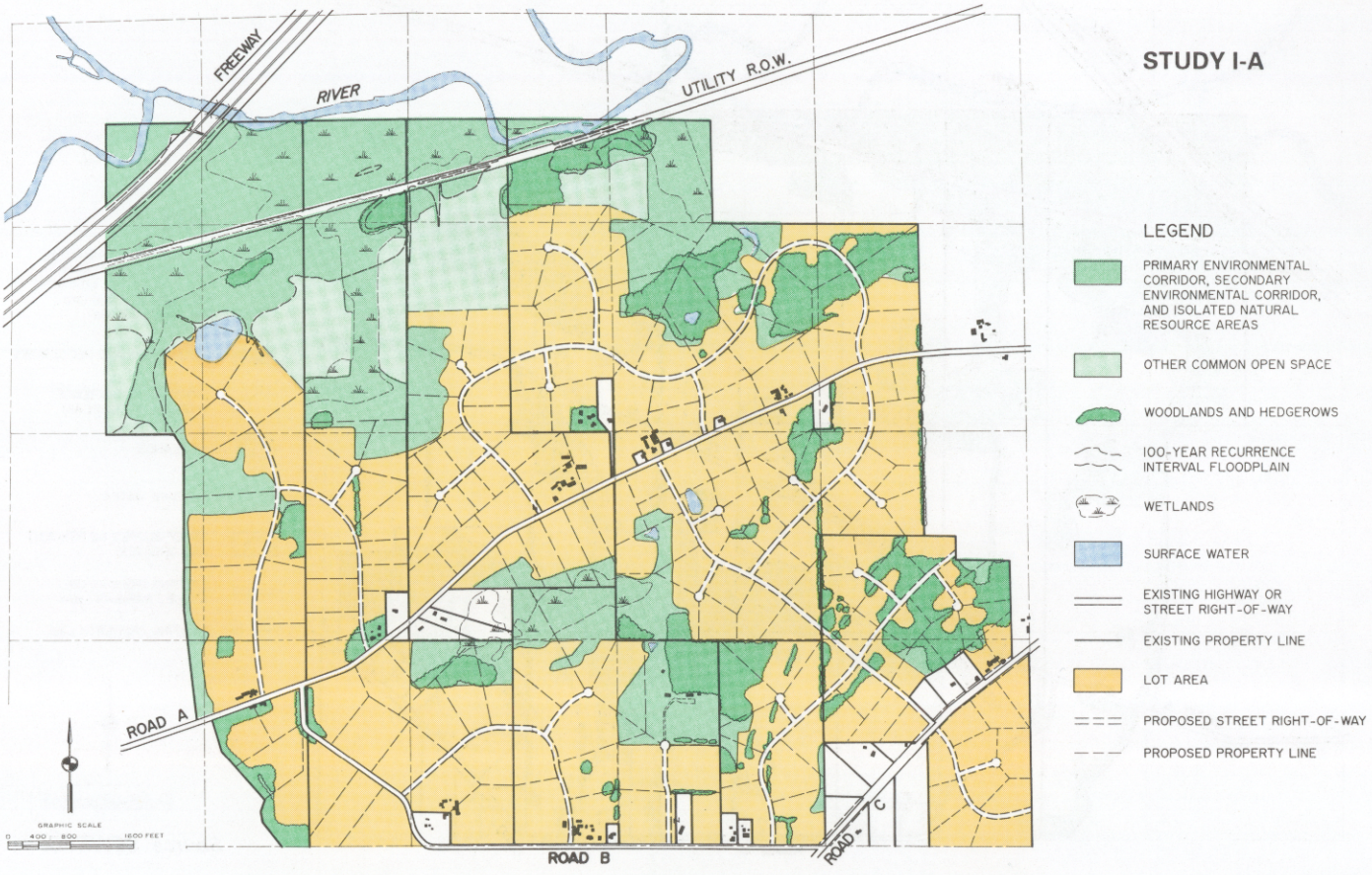
SOILS UNSUITABLE FOR ONSITE MOUND AND CONVENTIONAL SEWAGE-DISPOSAL SYSTEMS



Source: SEWRPC.

Figure E-3

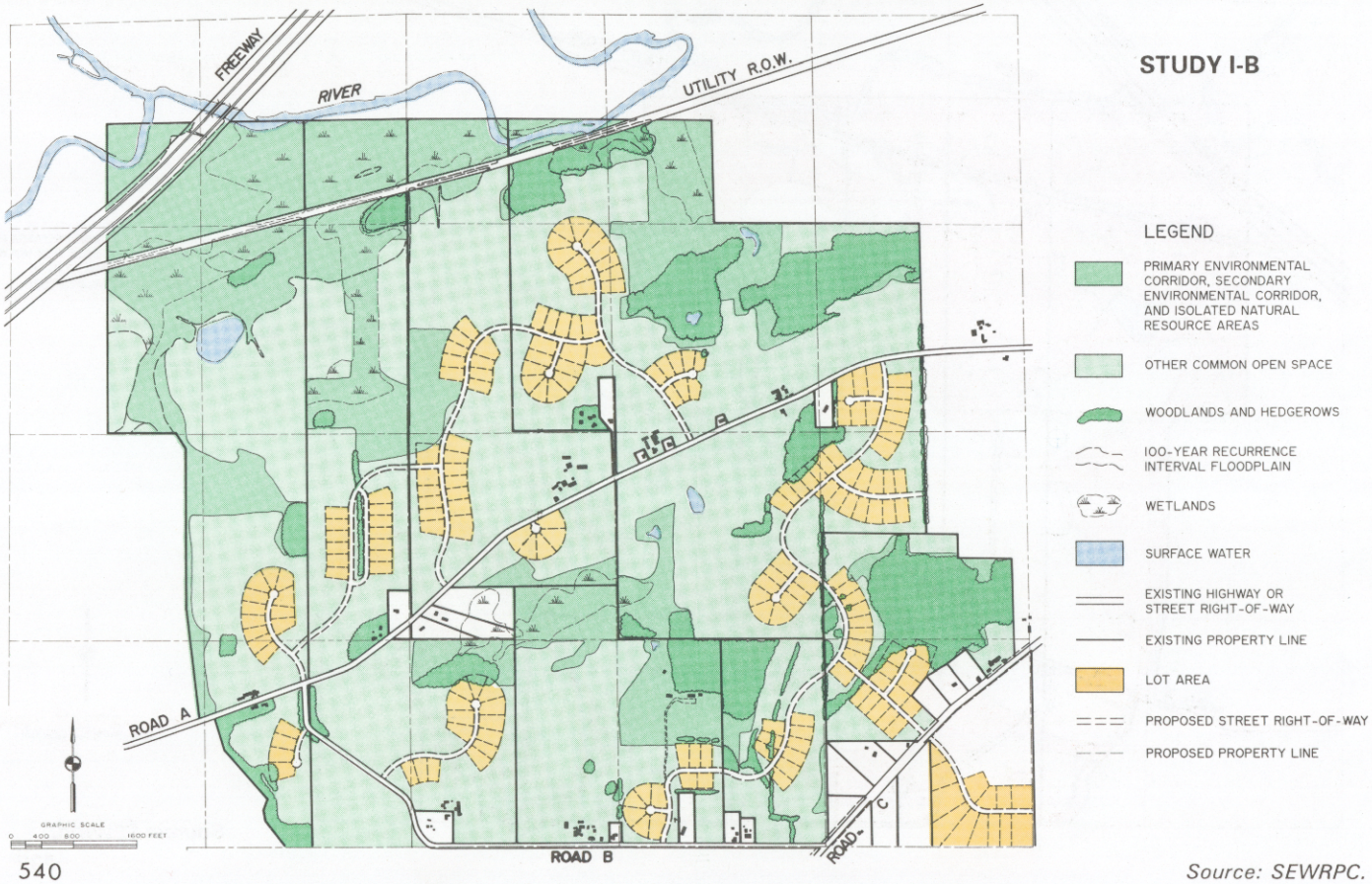
EXISTING ZONING WITH CONVENTIONAL DEVELOPMENT



Source: SEWRPC.

Figure E-4

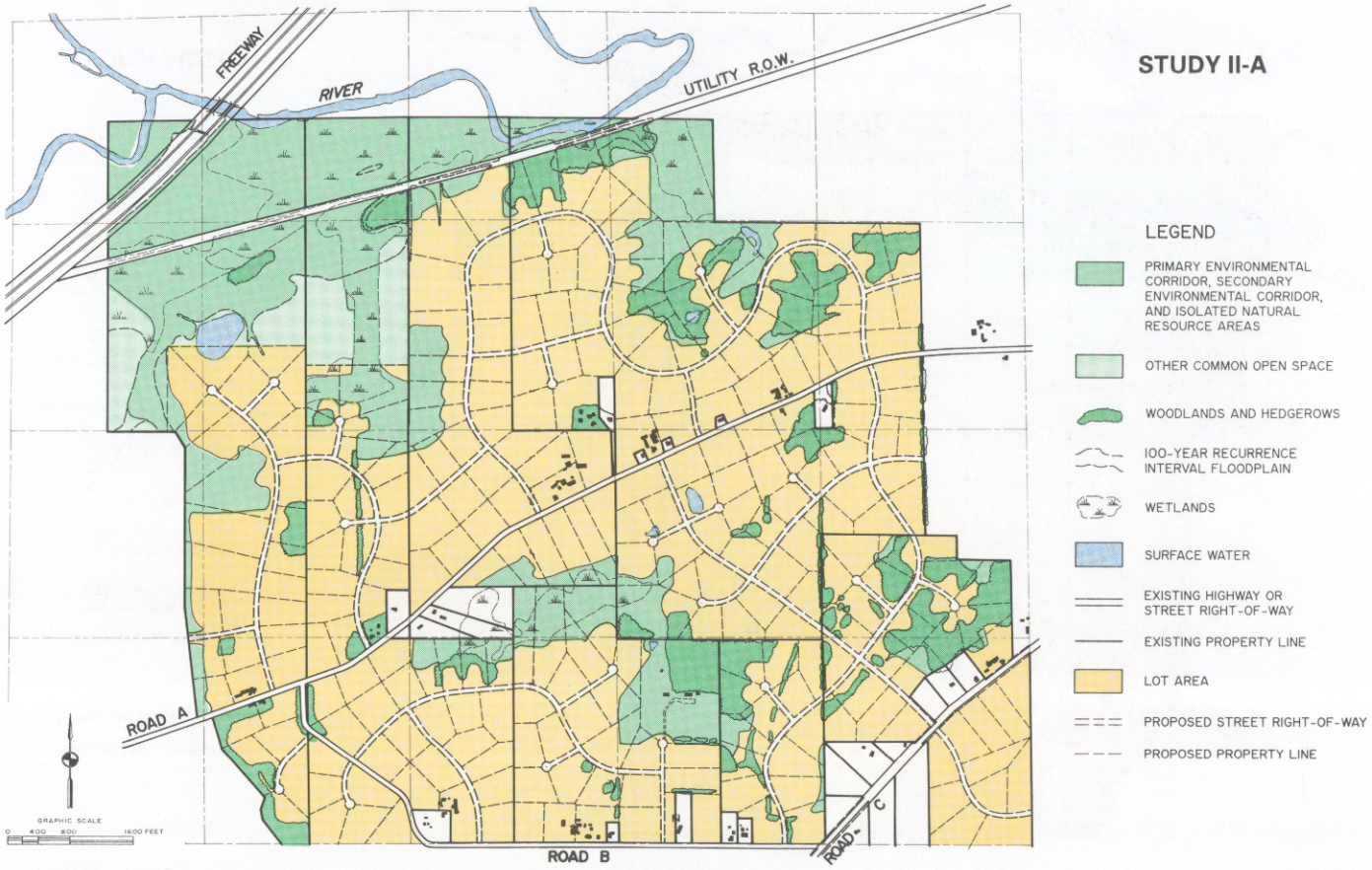
EXISTING ZONING WITH CLUSTER DEVELOPMENT



Source: SEWRPC.

Figure E-5

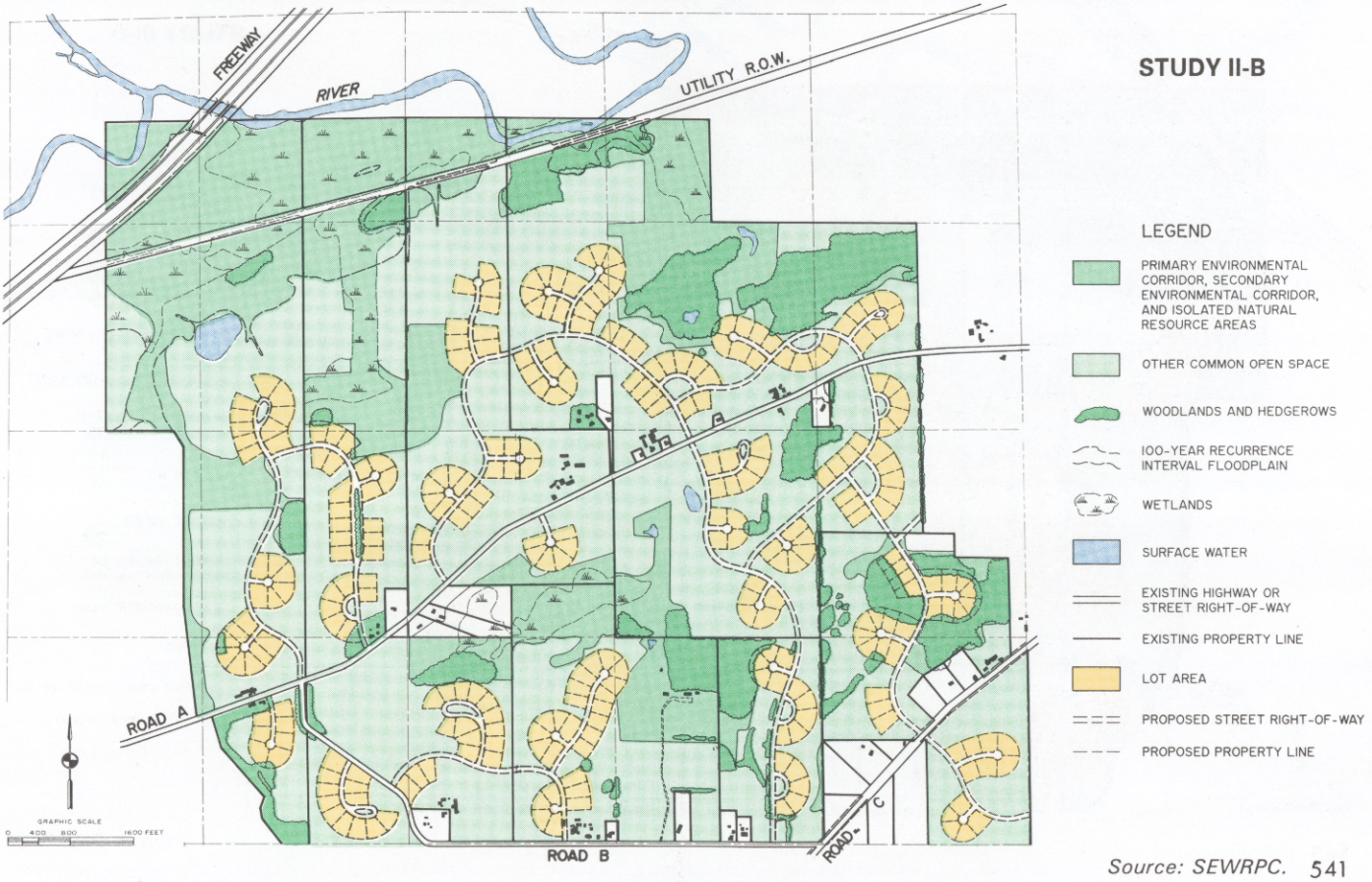
DENSITY OF ONE DWELLING UNIT PER FIVE ACRES WITH CONVENTIONAL DEVELOPMENT



Source: SEWRPC.

Figure E-6

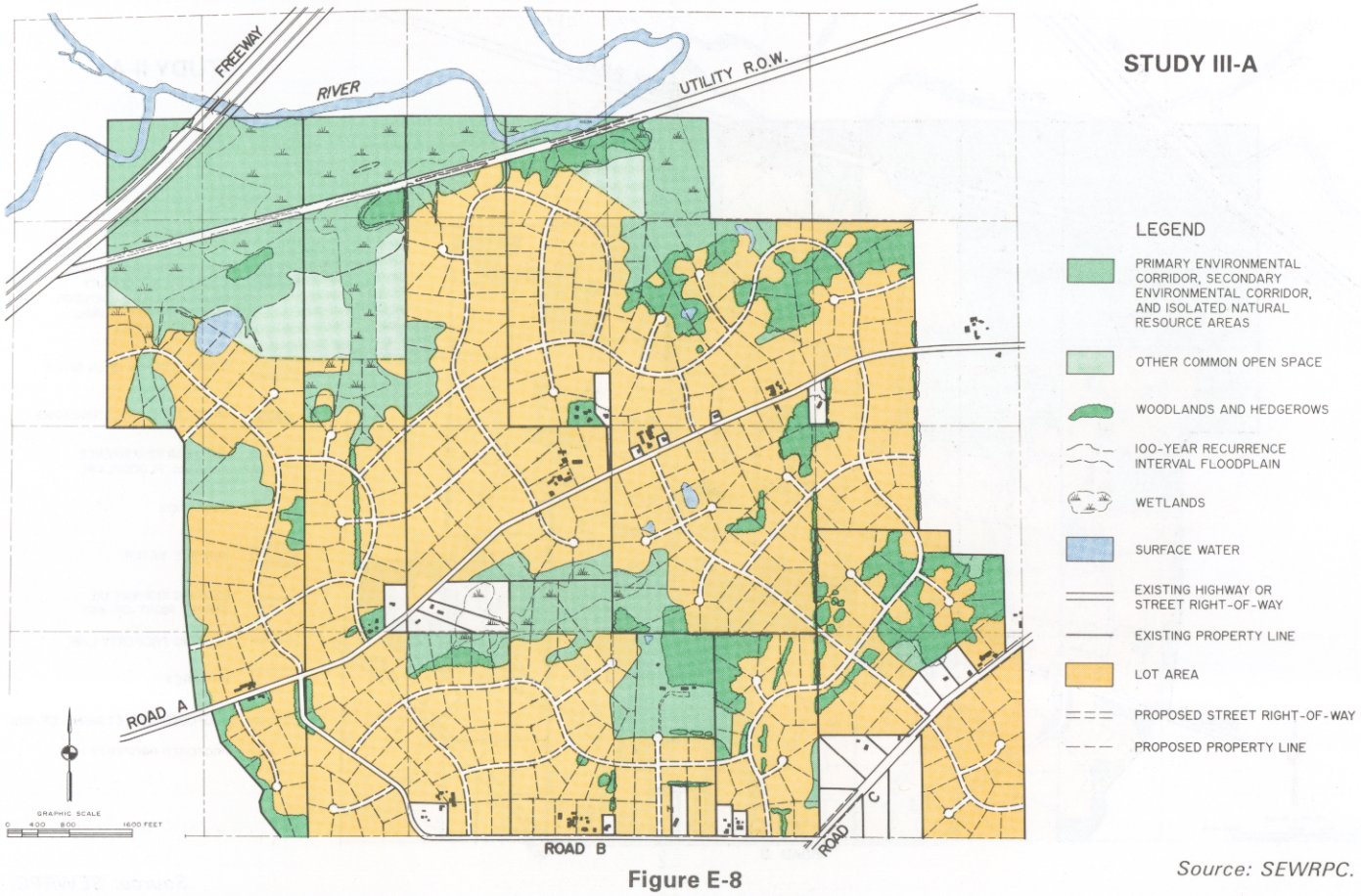
DENSITY OF ONE DWELLING UNIT PER FIVE ACRES WITH CLUSTER DEVELOPMENT



Source: SEWRPC.

Figure E-7

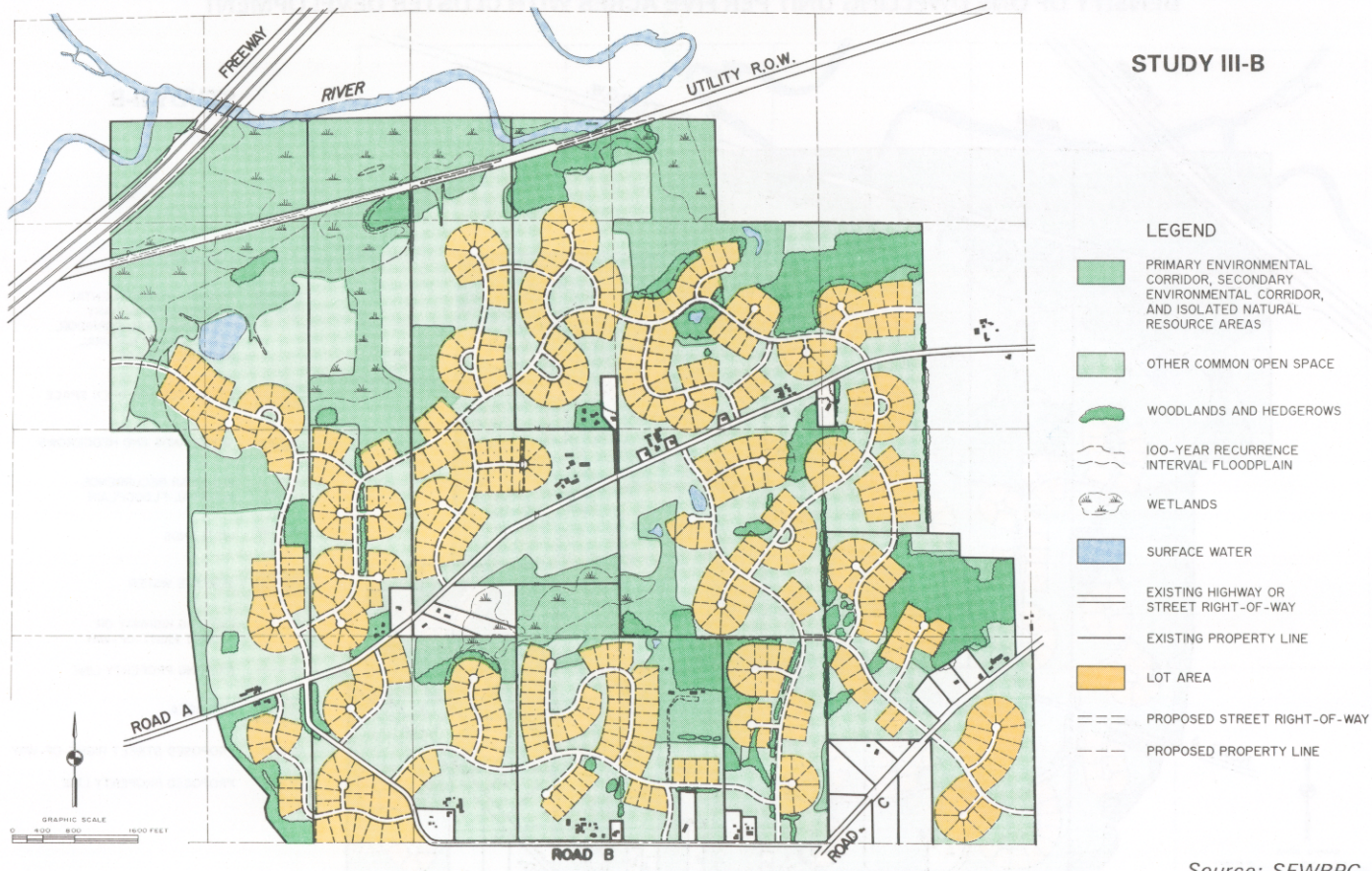
DENSITY OF ONE DWELLING UNIT PER THREE ACRES WITH CONVENTIONAL DEVELOPMENT



Source: SEWRPC.

Figure E-8

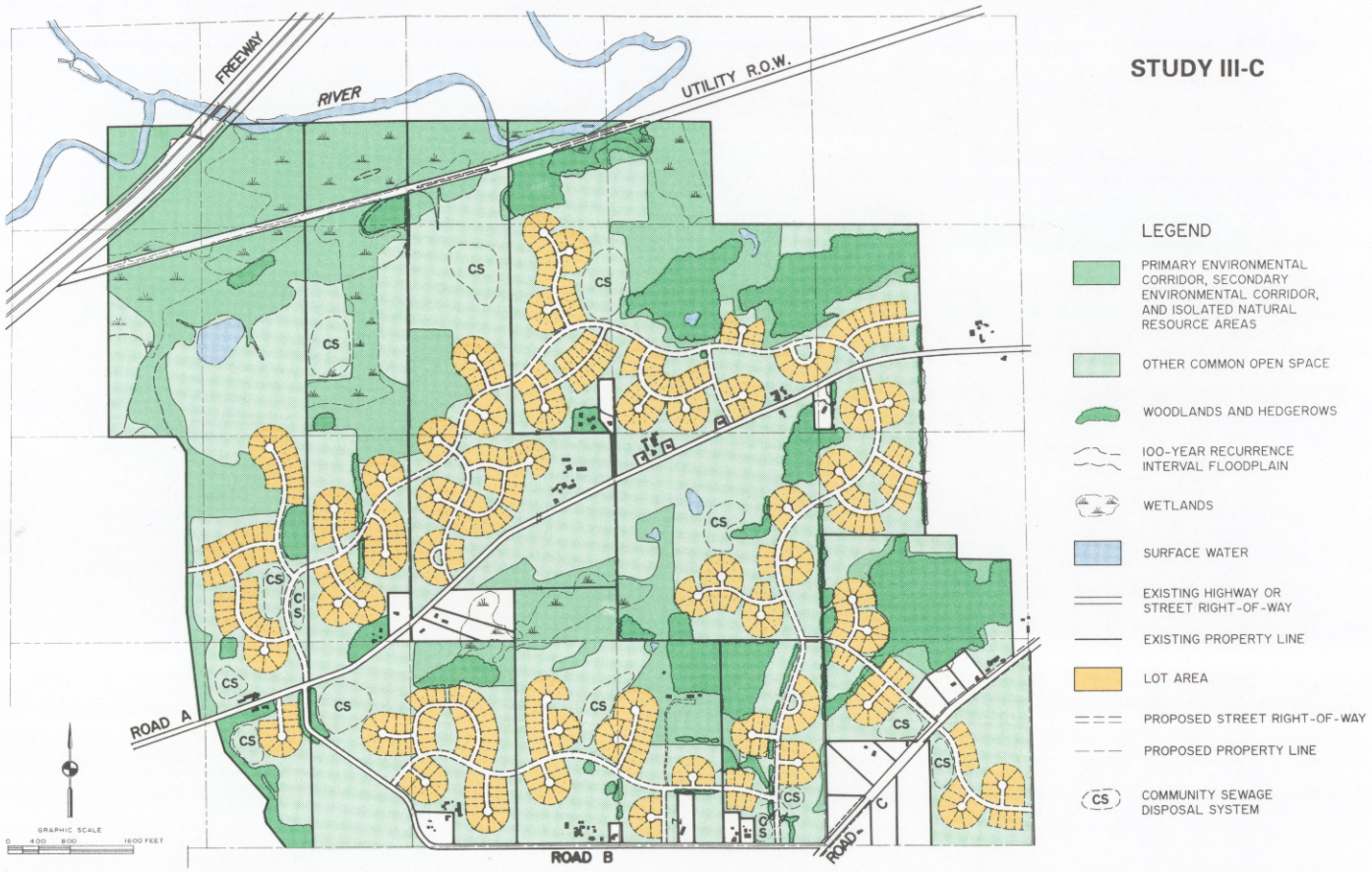
DENSITY OF ONE DWELLING UNIT PER THREE ACRES WITH CLUSTER DEVELOPMENT



Source: SEWRPC.

Figure E-9

DENSITY OF ONE DWELLING UNIT PER THREE ACRES WITH CLUSTER DEVELOPMENT WITH A 20 PERCENT DENSITY BONUS



Source: SEWRPC.